CLAIMS

What is claimed is:

1. A method of inducing growth of a neuron, the method comprising administering to the neuron a polypeptide encoded by a nucleic acid comprising SEQ ID NO:1.

2. The method of claim 1, wherein the polypeptide comprises the amino acid sequence of SEQ ID NO:2.

3. A method of inducing growth of a neuron, the method comprising administering to the neuron a polypeptide comprising the amino acid sequence of SEQ ID NO:3.

4. The method of claim 1, wherein the neuron is a peripheral nervous system neuron of a mammal.

5. The method of claim 1, wherein the neuron is a central nervous system neuron of a mammal.

6. The method of claim 1, wherein the neuron has been damaged.

7. The method of claim 1, wherein the neuron has been axotomized.

8. The method of claim 1, wherein the neuron growth comprises axonal outgrowth.

9. The method of claim 1, wherein the neuron growth comprises nerve regeneration.

10. The method of claim 1, wherein the neuron is in a mammal.

11. The method of claim 1, wherein the neuron is in a human.

12. A method of inducing nerve regeneration of a damaged nerve, the method comprising administering to the damaged nerve a polypeptide encoded by a nucleic acid comprising SEQ ID NO:1.

13. The method of claim 12, wherein the damaged nerve is a nerve of the central nervous system of a mammal.

14. The method of claim 12, wherein the damaged nerve is a nerve of the peripheral nervous system of a mammal.

15. The method of claim 12, wherein the damaged nerve is a sciatic nerve.

16. A method of inducing growth of a neuron, the method comprising administering to a neuron a polypeptide encoded by a nucleic acid comprising SEQ ID NO:1, wherein the expression of the polypeptide is effected within the neuron.

17. A method of identifying a test compound that modulates the activity of a polypeptide comprising SEQ ID NO:2, the method comprising administering to a neuron the test compound in the presence of the polypeptide and assaying the level of growth of the neuron in the presence of the test compound compared with the level of growth of another identical neuron in the absence of the test compound but in the presence of the polypeptide, wherein a higher or lower level of growth of the neuron in the presence of the test compound compared with the level of growth of the other identical neuron in the absence of the test compound is an indication that the test compound modulates the activity of the polypeptide.

18. The method of claim 17, wherein the growth of the neuron is stimulated.

19. The method of claim 17, wherein the growth of the neuron is inhibited.

20. A pharmaceutical composition comprising the test compound of claim 17 and a pharmaceutically-acceptable carrier, wherein administration of the pharmaceutical composition to a patient modulates neuron growth in the patient.

21. The method of claim 3, wherein the neuron is a peripheral nervous system neuron of a mammal.

22. The method of claim 3, wherein the neuron is a central nervous system neuron of a mammal.

23. The method of claim 3, wherein the neuron has been damaged.

24. The method of claim 3, wherein the neuron has been axotomized.

25. The method of claim 3, wherein the neuron growth comprises axonal outgrowth.

26. The method of claim 3, wherein the neuron growth comprises nerve regeneration.

27. The method of claim 3, wherein the neuron is in a mammal.

28. The method of claim 3, wherein the neuron is in a human.

29. A method of inducing nerve regeneration of a damaged nerve, the method comprising administering to the damaged nerve the polypeptide comprising the amino acid sequence of SEQ ID NO:3.

30. The method of claim 29, wherein the damaged nerve is a nerve of the central nervous system of a mammal.

31. The method of claim 29, wherein the damaged nerve is a nerve of the peripheral nervous system of a mammal.

32. The method of claim 29, wherein the damaged nerve is a sciatic nerve.

33. A diagnostic kit to monitor regeneration of a neuron, wherein the kit comprises a polypeptide comprising the amino acid sequence of SEQ ID NO:2, an applicator, and instructions for the use thereof.

34. A diagnostic kit to monitor regeneration of a neuron, wherein the kit comprises a polypeptide comprising the amino acid sequence of SEQ ID NO:3, and applicator, and instructions for the use thereof.

35. A small-molecule mimic of SPRR1A capable of inducing growth of a neuron when administered to the neuron.

36. A small-molecule mimic of SPRR1A capable of inducing nerve regeneration of a damaged nerve when administered to the nerve.